



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/526,921 | 03/08/2005 | Johannes Marra | NL 020877 | 7555 |

24737 7590 12/11/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

DZIERZYNSKI, EVAN P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2875

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/526,921

Applicant(s)

MARRA ET AL.

Examiner

Evan Dzierzynski

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/3/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification of the disclosure is objected to because it lacks a heading, and also a Brief Description of the Drawings. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 9-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hou et al. (US Pat 5839823).

As for claim 1, Hou et al. discloses a light source 112, a light-directing assembly 120 in close proximity to the light source comprising a plurality of microprisms 122, each microprism comprising an input surface (bottom of 122) that admits light radiating from the light source, an output surface (top of 122) distal from and parallel to the input surface, and at least one sidewall 136 disposed between and contiguous with the input and output surfaces. Hou et al. also discloses that the sidewall forms an obtuse tilt angle (col 3, ln 2+) with respect to the input surface and is positioned for effecting total reflection (abstract) of the light rays received by the input surface, the sidewalls of the microprisms defining interstitial regions (col 4, ln 46+) between the microprisms. Hou et al. also teaches at least one blocking means (col 2, ln 1-3) positioned to block the

Art Unit: 2875

passage of light through the sidewalls, and an optical means 400 located between the light source and the light-directing assembly, characterized in that the optical means comprises a free-flowing reflective powder, since Hou et al. teaches using a dry powder (col 4, line 53), to at least substantially shield the blocking means from direct exposure to light radiated from the light source.

As for claim 2, Hou et al. discloses that the reflective powder is a diffuse reflective powder (col 2, ln 36+).

As for claim 3, Hou et al. discloses that the powder comprises BaSO₄ particles (col 4, ln 50+).

As for claim 9, Hou et al. discloses that the reflective powder is incapable of absorbing light (col 4, ln 57-59).

As for claim 10, Hou et al. teaches that the blocking means is provided on a surface directly adjacent to the sidewalls of neighboring microprisms (col 7, ln 38-42).

As for claims 11-13, Hou et al. further discloses a blocking means comprising an aluminum layer that is provided on the sidewalls of the microprisms (col 4, ln 63+).

As for claim 14, Hou et al. further discloses that the powder is contained in the interstitial regions between the microprisms (col 4, ln 45+).

As for claim 15, Hou et al. further discloses that the powder is contained in a series of reflector elements 128 supported by a base plate 124 at least substantially extending in parallel with the light-directing assembly (Fig 2) and wherein each element is positioned centrally underneath a corresponding interstitial region between adjacent microprisms.

Art Unit: 2875

As for claim 16, Hou et al. discloses that the area of each reflector element facing the light source corresponds to the projected cross-section area of a corresponding interstitial region facing the light source the projection carried out on an imaginary plane extending in parallel with the light-directing assembly at the location of and containing the input surfaces (Fig 2).

As for claim 17, Hou et al. discloses the relative dimensions of the device (col 2, ln 46-63). It is apparent that from the dimensions discussed that the width of the interstitial regions is at least 1 mm and wherein the height thereof is at least 1 mm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al.

As for claims 4, 5 and 6, Hou et al. teaches the use of dry powder as a reflective filler material (col 4, ln 48-53) and teaches the use of aluminum as a powder for use with the device (col 2, ln 35-38) but fails to teach that the diameter size and the weight percentage of the particles discussed. It would have been obvious to make the aluminum particles in the range of 10 to 50 nm and between 0.1 and 5 wt. %, and to make the diameter of the particles range between 0.1 and 100 micrometer, since it has

Art Unit: 2875

been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al. in view of Mizobe (US Pat 5249104).

Hou et al. discloses the device as discussed above but fails to teach or disclose that the powder is mixed with color pigments. In a similar device, Mizobe teaches the use of color pigment powder (col 4, ln 23). It would have been obvious for one of ordinary skill in the art to combine the color pigments of Mizobe with the device of Hou et al. in order to provide the device with a means of creating color. One would have been motivated to combine the color pigments of Mizobe with the device of Hou et al. where it is desired to have a colored illumination device.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al. (US Pat 5839823) in view of Steckl et al. (US Pat 6635306).

As for claim 18, Hou et al. discloses a wedge plate 110 having a plurality of microprisms 122, adjacent microprisms of the plurality of microprisms forming interstitial regions between the adjacent microprisms (col 4, ln 46+), a channel plate 120 parallel with the wedge plate (Fig 2), the channel plate forming a plurality of reflective elements filled with free-flowing reflective powder (col 4, ln 50+). Hou also teaches that each of the interstitial regions is aligned with one of the plurality of reflective elements and one of the plurality of layers is disposed between one of the plurality of reflective elements and the aligned interstitial region (col 5, ln 13+). Hue also discloses a masking (280, col

Art Unit: 2875

5, In 10+) that is aligned with one of the plurality of reflective elements (Fig 19, col 5, In 10+), but fails to specifically teach that the masking comprises a plurality of absorbing black layers.

Steckl et al. teaches the use of a black light-absorbing layer (col 3, In 27+). It would have been obvious to use the black light-absorbent layer of Steckl et al. with the device of Hou et al. to provide improved lighting effects for the device. One would have been motivated to do so to provide the device of Hou et al. with an absorbent layer that provides high contrast when used in a flat panel display (col 3, In 34+).

As for claim 19, Hou et al. discloses masking layers 280 that are disposed on the channel plate. See the discussion in regard to claim 18 for the motivation for combining with Steckl for the absorbing black layers.

As for claim 20, Hou et al. discloses the device as discussed above, and further discloses that there may be applications where a less-highly reflective material or absorptive material would be desirable (col 4, In 60+), but fails to specifically state that each of the interstitial regions is filled with air. It would have been obvious for one of ordinary skill in the art to use this teaching and to not fill the interstitial regions with anything, thereby making them full of air.

As for claim 21, Hou teaches an illumination system comprising a wedge plate 110 having a plurality of microprisms 122, adjacent microprisms of the plurality of microprisms forming interstitial regions between the adjacent microprisms (col 4, In 46+), the plurality of microprisms having sidewalls facing the interstitial regions; a base holding plate 120 parallel the wedge plate, the base holding plate forming a plurality of

Art Unit: 2875

reflective elements (col 4, ln 50+), each of the plurality of reflective elements being in communication with one of the interstitial regions (Fig 2), the plurality of reflective elements and the interstitial regions being filled with free-flowing reflective powder(col 4, ln 50+). Hou fails to specifically teach that a plurality of absorbing black layers are disposed on the sidewalls.

Steckl et al. teaches the use of a black light absorbing layer (col 3, ln 27+). It would have been obvious to use the black light-absorbent layer of Steckl et al. with the device of Hou et al. to provide improved lighting effects for the device. One would have been motivated to do so to provide the device of Hou et al. with an absorbent layer that provides high contrast when used in a flat panel display (col 3, ln 34+).

Response to Arguments

Applicant's arguments filed 10/3/2006 have been fully considered but they are not persuasive. In regard to the argument about the powder in the interstitial region falling out, whether or not the device actually holds the dry powder in a confined space is not clearly stated or disclosed in the disclosure or the specification of Hou et al. (US Pat 5839823). However, the assertion the solid filler may be a diffuse dry powder (col 4, ln 50+) anticipates the limitations "said optical means comprise a free-flowing" powder. The reason is that, at some point in time of the manufacturing of the device of Hou, the solid powder is dry and free flowing. Whether this occurs either when the device is being assembled/manufactured or when the device of Hou is in use is not

Art Unit: 2875

clearly stated by the specification, however, it still anticipates the applicant's claimed limitations.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Dzierzynski whose telephone number is (571)-272-2336. The examiner can normally be reached on Monday through Friday 7:00 am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on M-F (571)-272-2009. The fax phone

Art Unit: 2875

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Evan Dzierzynski

11/29/2006



RENEE LUEBKE
PRIMARY EXAMINER